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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/558,204 11/16/95 NELSON

C LT-5-REISSUE

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21M1/0611

RILEY, EXAMINER
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ART UNIT	PAPER NUMBER
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2111

32

DATE MAILED:

06/11/96

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

08/558,204

Applicant(s)

Nelson

Examiner

Riley

Group Art Unit

2111

☒ Responsive to communication(s) filed ~~on~~ 16 Nov 1995

☒ This action is FINAL.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of

## Disposition of Claim

☒ Claim(s) 1-92 is/are pending in the application.  
Of the above, claim(s) 83 is/are withdrawn from consideration.

☒ Claim(s) 1-81 is/are allowed.

☒ Claim(s) 82 and 84-92 is/are rejected.

☐ Claim(s) is/are objected to.

☐ Claims are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on is approved disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. §

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.

☐ received in Application No. (Series Code/Serial Number)

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received:

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(a)-(e)

## Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s).

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

***Reissue***

***Response to Amendment***

1. Applicant has filed a continuation of 07/683,549 which was received in the USPTO mail room on 16 November 1995. The only amendment found therein updated the information regarding the parent case of this continuation. Therefore the original amendments and arguments filed 13 March 1995 have again been fully considered but they are still not deemed to be persuasive. In response to Applicant's argument (of 13 March 1995) that there is no suggestion to combine the references, the Examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA) 1969. In this case, the combination of UC3842 in view of the Texas Instruments reference (Types RC4193M, RC4193I and RC4193C micropower switching regulators) and the Texas Instruments

reference (Type TL496C 9-Volt Power-Supply Controller in claims 86-92 and the combination of the UC3842 reference in view of LSH6335P reference, LSH6355P reference, Moreau, and Mashino in claims 82-85 is seen as a design choice (see below for a fuller explanation). The 102(a) rejection of claim 89 has been amended to reflect the applicant's latest revision of claim 89 stating, *inter alia*, no more than 5 terminal connection are required for operation.

Applicant has correctly stated the law concerning the prior rejection based on 35 USC 251 which has been withdrawn.

Further, by amendment, applicant has overcome all previous rejections and objections of the claims and specification based on 35 USC 112.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same

person or subject to an obligation of assignment to the same person.

3. Claims 86-92 are rejected under 35 U.S.C. § 103 as being unpatentable over UC3842 and further in view of the Texas Instruments reference (Types RC4193M, RC4193I and RC4193C micropower switching regulators) and the Texas Instruments reference (Type TL496C 9-Volt Power-Supply Controller. The UC3842 reference discloses the invention essentially as claimed including an input terminal - 7, a ground terminal - 5, an output terminal - 6, a feedback terminal - 2, a compensation terminal - 1, a power switching transistor - transistor of fig. 1, a circuit for varying the on and off duty cycle of the transistor - PWM latch, a circuit including a resistive element - Rsense, a circuit for generating an error signal - error amplifier, a circuit for comparing the current sense signal to the error signal - current sense comparator and said comparing circuit being responsive to control signals applied to the compensation terminal for limiting peak current and variably limiting current conducted by the switching transistor - Pg. 73 and Fig. 4.

Claims 86, 87, 90 and 91 additionally recite a shutdown state. The UC3842 reference however does not disclose a shutdown state of the regulator. The Texas Instruments Reference for Types RC4193M, RC4193I and RC4193C micropower switching regulators discloses on page 2-63 the RC4193 will shut off when

pin 6 is below .5 volts and that this is used to shut down the regulator whenever the battery voltage drops. The TL496C reference discloses allowing minimal supply current drain during stand-by operation (see second paragraph of description). It would have been obvious to one of ordinary skill in the art at the time of the invention to add a shutdown state to the UC3842 switching regulator since the inventor of the UC3842 would have been drawn to the beneficial feature of eliminating power-up sequencing problems taught by the references.

Claims 88 and 92 additionally recite a bipolar transistor. This feature is shown in Fig. 1 of the UC3842 reference.

4.

Claims 82-85 are rejected under 35 U.S.C. § 103 as being unpatentable over UC3842 reference in view of LSH6335P reference, LSH6355P reference, Moreau and Mashino.

The UC3842 reference discloses (as described *supra*) the invention substantially as claimed. However, the UC3842 reference does not disclose at most five terminals. It would have been obvious to one of ordinary skill in the art at the time of the invention delete the five volt reference terminal and make both the setting of the time constant and the current sensing so that the time constant terminal and the current sense terminal are no longer necessary since it is known in the switching regulator art to include functions internally to reduce the

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number of terminals to five as taught by LSH 6335P, LSH 6355P and Moreau. Further, Mashino discloses the beneficial feature (i.e., a design choice) of reducing the number of terminals to simplify the production steps and reduce production costs.

Claims 83 and 85 additionally recite that the control signal is generated when the current sense signal equals or exceeds the error signal, respectively. The UC3842 reference discloses this feature on page 71.

Claim 84 additionally recites means responsive to control signals applied to the compensation terminal - pg. 73.

***Allowable Subject Matter***

5. Claims 1-81 are allowable over the prior art of record.
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Riley whose telephone number is (703) 305-3487. The examiner may normally be reached Monday through Friday, 8:30 - 5:30, est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Wong, can be reached at (703) 305-3477.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1782.

Any necessary fax can be sent to (703) 305-3431 or 32.

  
sr  
Thursday, 6 June 1996

  
PETER S. WONG  
SUPERVISORY PATENT EXAMINER  
GROUP 2100